

SEQUENCE LISTING

<110> CHUGAI RESEARCH INSTITUTE FOR MOLECULAR MEDICINE, INC.

CHUGAI SEIYAKU KABUSHIKI KAISHA

<120> LKB1 gene knock out animals

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<151> 1999-05-31

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<213> Mus musculus

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Val Ala Asp Pro Glu Pro Leu Gly Leu Phe Ser Glu Gly Glu Leu Met

5

10

15

tcg gtg ggc atg gac acc ttc atc cac cgc atc gac tcc acc gag gta 152

Ser Val Gly Met Asp Thr Phe Ile His Arg Ile Asp Ser Thr Glu Val

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atc tac cag ccg cgc cgc aaa cgc gcc aag ctc atc ggc aag tac ctg 200

Ile Tyr Gln Pro Arg Arg Lys Arg Ala Lys Leu Ile Gly Lys Tyr Leu

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atg ggg gac ctg ctc ggg gag ggc tcg tac ggc aag gtg aag gag gtg 248

Met Gly Asp Leu Leu Gly Glu Gly Ser Tyr Gly Lys Val Lys Glu Val

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ctg gac tcc gag acc tta tgc cgc agg gcg gtc aag atc ctc aag aag 296

Leu Asp Ser Glu Thr Leu Cys Arg Arg Ala Val Lys Ile Leu Lys Lys

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aaa aag ctg cgc agg atc ccc aat gga gag gcc aac gtc aag aag gag 344

Lys Lys Leu Arg Arg Ile Pro Asn Gly Glu Ala Asn Val Lys Lys Glu

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atc cag ctg ctg cgg cgg ctg cgg cat cgg aat gtg atc cag ctt gtg 392

Ile Gln Leu Leu Arg Arg Leu Arg His Arg Asn Val Ile Gln Leu Val

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gac gtg ctg tac aat gag gag aag cag aag atg tat atg gtg atg gag 440

Asp Val Leu Tyr Asn Glu Glu Lys Gln Lys Met Tyr Met Val Met Glu

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tac tgc gta tgt ggc atg cag gag atg ctg gac agt gtg ccg gag aag 488

Tyr Cys Val Cys Gly Met Gln Glu Met Leu Asp Ser Val Pro Glu Lys

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Arg Phe Pro Val Cys Gln Ala His Gly Tyr Phe Arg Gln Leu Ile Asp

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ggc ctg gaa tac cta cac agc cag ggc att gtt cac aag gac atc aag 584

Gly Leu Glu Tyr Leu His Ser Gln Gly Ile Val His Lys Asp Ile Lys

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| ctc ggt gtt gcc gag gcc ctg cac cct ttc gct gtg gat gac acc tgc | | 680 |
| Leu Gly Val Ala Glu Ala Leu His Pro Phe Ala Val Asp Asp Thr Cys | | |
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| Arg Thr Ser Gln Gly Ser Pro Ala Phe Gln Pro Pro Glu Ile Ala Asn | | |
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| Val Thr Leu Tyr Asn Ile Thr Thr Gly Leu Tyr Pro Phe Glu Gly Asp | | |
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| Asn Ile Tyr Lys Leu Phe Glu Asn Ile Gly Arg Gly Asp Phe Thr Ile | | |
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| Pro Cys Asp Cys Gly Pro Pro Leu Ser Asp Leu Leu Arg Gly Met Leu | | |

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gag tat gag ccg gcc aag agg ttc tcc atc cga cag att agg cag cac 968

Glu Tyr Glu Pro Ala Lys Arg Phe Ser Ile Arg Gln Ile Arg Gln His

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Ser Trp Phe Arg Lys Lys His Pro Leu Ala Glu Ala Leu Val Pro Ile

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cca cca agc cca gac act aag gac cgc tgg cgc agt atg act gta gtg 1064

Pro Pro Ser Pro Asp Thr Lys Asp Arg Trp Arg Ser Met Thr Val Val

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ccc tac ctg gag gac ctg cat ggc cgt gcg gag gag gag gag gaa 1112

Pro Tyr Leu Glu Asp Leu His Gly Arg Ala Glu Glu Glu Glu Glu

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Asp Leu Phe Asp Ile Glu Asp Gly Ile Ile Tyr Thr Gln Asp Phe Thr

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gtg cct gga cag gtc ctg gaa gag gaa gtg ggt cag aat gga cag agc 1208

Val Pro Gly Gln Val Leu Glu Glu Val Gly Gln Asn Gly Gln Ser

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cac agt ttg ccc aag gct gtt tgt gtg aat ggc aca gag ccc cag ctc 1256

His Ser Leu Pro Lys Ala Val Cys Val Asn Gly Thr Glu Pro Gln Leu

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Ser Ser Lys Val Lys Pro Glu Gly Arg Pro Gly Thr Ala Asn Pro Ala

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cgc aag gtg tgc tcc agc aac aag atc cgc cggtc tcg gcc tgc aag 1352

Arg Lys Val Cys Ser Ser Asn Lys Ile Arg Arg Leu Ser Ala Cys Lys

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Gln Gln

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| 20 | 25 | 30 |
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Glu Val Ile Tyr Gln Pro Arg Arg Lys Arg Ala Lys Leu Ile Gly Lys

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Tyr Leu Met Gly Asp Leu Leu Gly Glu Gly Ser Tyr Gly Lys Val Lys

| | | |
|----|----|----|
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|----|----|----|

Glu Val Leu Asp Ser Glu Thr Leu Cys Arg Arg Ala Val Lys Ile Leu

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Lys Lys Lys Lys Leu Arg Arg Ile Pro Asn Gly Glu Ala Asn Val Lys

85

90

95

Lys Glu Ile Gln Leu Leu Arg Arg Leu Arg His Arg Asn Val Ile Gln

100

105

110

Leu Val Asp Val Leu Tyr Asn Glu Glu Lys Gln Lys Met Tyr Met Val

115

120

125

Met Glu Tyr Cys Val Cys Gly Met Gln Glu Met Leu Asp Ser Val Pro

130

135

140

Glu Lys Arg Phe Pro Val Cys Gln Ala His Gly Tyr Phe Arg Gln Leu

145

150

155

160

Ile Asp Gly Leu Glu Tyr Leu His Ser Gln Gly Ile Val His Lys Asp

165

170

175

Ile Lys Pro Gly Asn Leu Leu Leu Thr Thr Asn Gly Thr Leu Lys Ile

180

185

190

Ser Asp Leu Gly Val Ala Glu Ala Leu His Pro Phe Ala Val Asp Asp

195

200

205

Thr Cys Arg Thr Ser Gln Gly Ser Pro Ala Phe Gln Pro Pro Glu Ile

210

215

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Ala Asn Gly Leu Asp Thr Phe Ser Gly Phe Lys Val Asp Ile Trp Ser
 225 230 235 240

Ala Gly Val Thr Leu Tyr Asn Ile Thr Thr Gly Leu Tyr Pro Phe Glu
 245 250 255

Gly Asp Asn Ile Tyr Lys Leu Phe Glu Asn Ile Gly Arg Gly Asp Phe
 260 265 270

Thr Ile Pro Cys Asp Cys Gly Pro Pro Leu Ser Asp Leu Leu Arg Gly
 275 280 285

Met Leu Glu Tyr Glu Pro Ala Lys Arg Phe Ser Ile Arg Gln Ile Arg
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Gln His Ser Trp Phe Arg Lys Lys His Pro Leu Ala Glu Ala Leu Val
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Pro Ile Pro Pro Ser Pro Asp Thr Lys Asp Arg Trp Arg Ser Met Thr
 325 330 335

Val Val Pro Tyr Leu Glu Asp Leu His Gly Arg Ala Glu Glu Glu
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Glu Glu Asp Leu Phe Asp Ile Glu Asp Gly Ile Ile Tyr Thr Gln Asp

355

360

365

Phe Thr Val Pro Gly Gln Val Leu Glu Glu Val Gly Gln Asn Gly

370

375

380

Gln Ser His Ser Leu Pro Lys Ala Val Cys Val Asn Gly Thr Glu Pro

385

390

395

400

Gln Leu Ser Ser Lys Val Lys Pro Glu Gly Arg Pro Gly Thr Ala Asn

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Pro Ala Arg Lys Val Cys Ser Ser Asn Lys Ile Arg Arg Leu Ser Ala

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Cys Lys Gln Gln

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